

PATENT

Patent
89/04
Karnell

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-5. (cancelled)

6. (currently amended) ~~The device of claim 5~~ An input device comprising:

electronic circuitry for detecting user inputs and transmitting signals

a sleep-mode circuit, coupled to said electronic circuitry, for activating a reduced

a capacitive hand detection circuit for detecting the proximity of a user's hand to

said sleep mode circuit being responsive to said hand detect signal to awaken said

wherein said hand detection circuit is mounted inside a top of said housing, such

circuit;

first and second electrodes on said housing for capacitive connection with a user's

a first circuit, coupled to said first electrode, for determining an amount of time

for charging of a capacitance connected to said first circuit; and

a second circuit, coupled to said second electrode, for determining an amount of time for discharging of a capacitance connected to said second circuit;

such that an internal virtual ground is produced between said first and second electrodes; and

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wherein said first circuit comprises:
a comparator;
a controller coupled to an output of said comparator;
a voltage divider feedback circuit coupled between an output and a reference voltage input of said comparator;
a detection capacitor coupled between said first electrode and a signal input of said comparator; and
a switching circuit selectively coupling said signal input of said comparator to high and low voltage supplies.

7-26. (canceled)

²
~~27~~ (currently amended) An input device comprising:

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a housing;
electronic circuitry for detecting user inputs and transmitting signals corresponding to said inputs to an electronic device; and
an optical hand detection circuit for optically detecting the proximity of a user's hand to said housing and producing a hand detect signal;
a controller for turning on and off said a light emitter, and providing said hand ~~detect~~ detection signal only after a predetermined number of on cycles provides a reflection to said detector above a threshold, wherein said controller further:
filters ambient light frequencies different from a frequency of said light emitter;
cycles said light emitter on and off at a first rate before a hand detection, and at a second rate after a hand detection; and
requires detection of a hand for a predetermined number of cycles before issuing said hand detect signal.

³
~~28~~ (original) The input device of claim ²~~27~~ wherein said controller removes said hand detect signal in the absence of a control input to said input device for a predetermined amount of time after a detection of a hand.

~~29~~⁴ (previously presented) The input device of claim ~~27~~³ wherein said input device is a mouse.

~~30~~⁵ (previously presented) The input device of claim ~~27~~² further comprising:
a sleep-mode circuit, coupled to said electronic circuitry, for activating a reduced power operation of said electronic circuitry, said sleep mode circuit being responsive to said hand detect signal to awaken said electronic circuitry from said reduced power operation.

31. (canceled)

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